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PID	VST	P_NM	AGE	SEX	MD_ID	DRG	STAY	COST	PYMT	MD_ID	VOI	Avg Stay	Avg Cost	Avg Pymt
12345	1	AREN	54	M	3333	123	7	1000	1200	2222	1	3	600	500
23456	1	ERIS	25	F	4444	123	2	1200	1500	3333	2	6	900	950
12345	2	AREN	55	M	2222	127	3	600	500	4444	1	2	1200	1500
97531	1	MARY	65	F	3333	234	5	800	700					

FIG. 1

FIGURE 2A - FIGURES 2C

PT_ID	VST	P_NM	AGE	SEX	MB_ID	DRG_STAY	COST_PMT
			54	M	123	7	1000
			25	F	123	2	1200
12345	2	AREN	55	M	22222	127	3
			65	F	234	5	800
							700

MD_ID
2222

PT_ID	VST	P_NM	AGE	SEX	MB_ID	DRG_STAY	COST_PMT
12345	1	AREN	54	M	33333	123	7
			25	F	123	2	1200
			55	M	127	3	600
97531	1	MARY	65	F	33333	234	5
							800
							700

MD_ID
3333

PT_ID	VST	P_NM	AGE	SEX	MB_ID	DRG_STAY	COST_PMT
			54	M	123	7	1000
23456	1	ERIS	25	F	4444	123	2
			55	M	127	3	600
			65	F	234	5	800
							700

MD_ID
4444

FIG. 2

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CREATE VIEW INPT_FACT AS
SELECT (CASE WHEN MD_ID = *user-id* THEN PT_ID ELSE NULL END) PT_ID,
(CASE WHEN MD_ID = *user-id* THEN VST ELSE NULL END) VST,
(CASE WHEN MD_ID = *user-id* THEN P_NM ELSE NULL END) P_NM,
AGE, SEX,
(CASE WHEN MD_ID = *user-id* THEN MD_ID ELSE NULL END) MD_ID,
DRG, STAY, COST, PYMT
FROM INPT_BASE;

FIG. 3

SELECT MD_ID, COUNT(*) VOL,
AVG(STAY) AVG_STAY, AVG(COST) AVG_COST, AVG(PYMT) AVG_PYMT
FROM INPT_FACT
GROUP BY MD_ID ORDER BY AVG_STAY DESC;

FIG. 4

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FIG. 5

MD_ID	VOL	Avg_Stay	Avg_Cost	Avg_Pvmt	MD_ID	VOL	Avg_Stay	Avg_Cost	Avg_Pvmt
3	4.67	1000	1133	3333	2	6	900	950	3
2222	1	3	600	500	2	2.5	900	1000	4444

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```
CREATE VIEW INPT_GRP_BY_MD
SELECT (CASE WHEN MD_ID = user-id THEN MD_ID ELSE NULL END) MD_ID,
       COUNT(*) VOL,
       AVG(STAY) AVG_STAY, AVG(COST) AVG_COST, AVG(PYMT) AVG_PYMT
  FROM INPT_BASE GROUP BY MD_ID ORDER BY AVG_STAY DESC;
```

FIG. 6

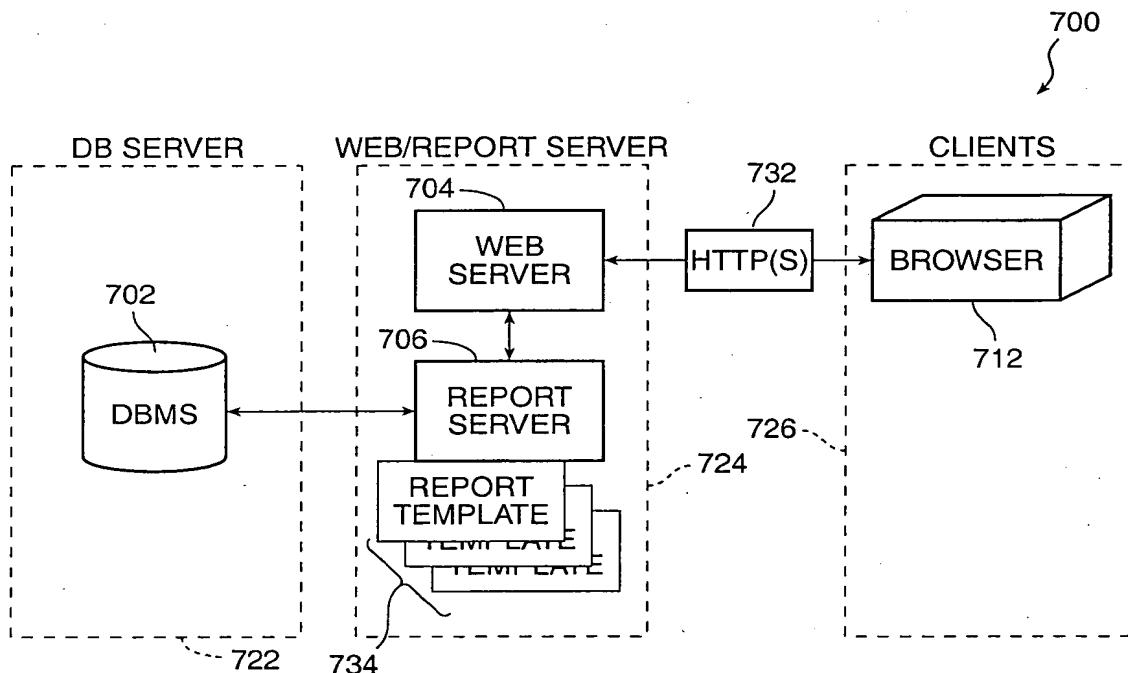


FIG. 7

Access Level	Role	Access Policy
I	Executive	Access to all data.
II	Medical Doctor	Access to doctor's own patient visit data only. The patient privacy information of the other patient visit data should be blinded. The other medical doctor's privacy information should be also blinded.
III	Financial Analyst	Access to financial information without any medical doctor's information.

FIG. 8

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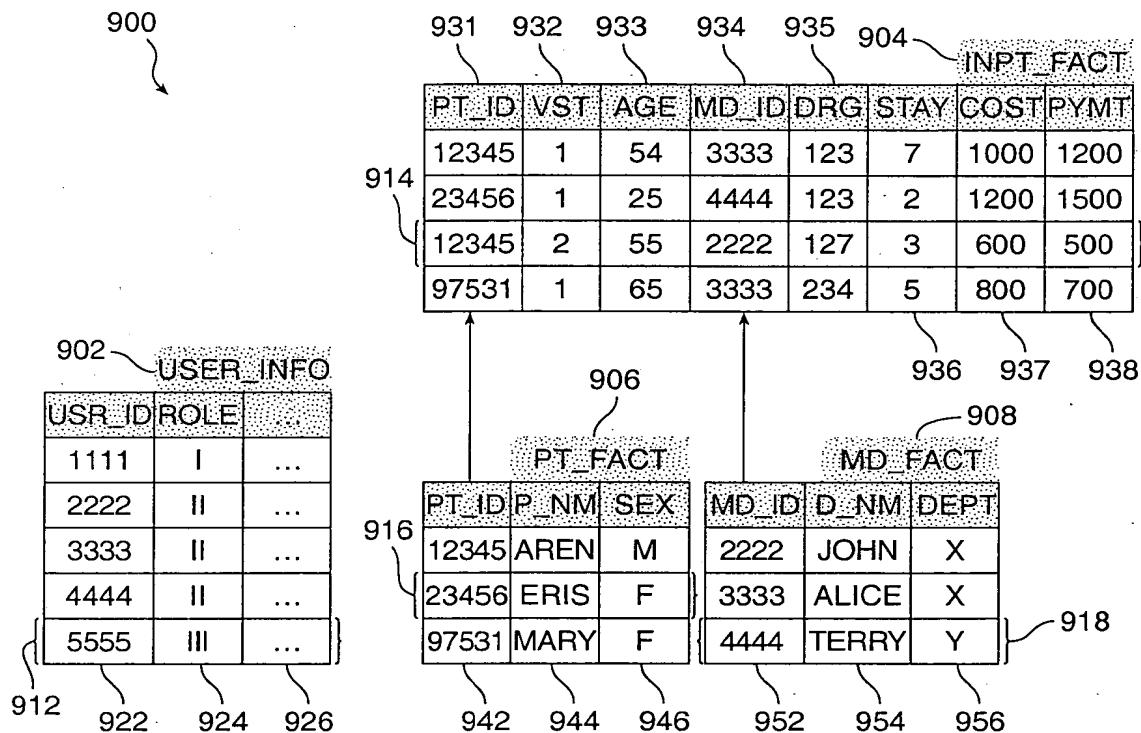


FIG. 9

```

CREATE OR REPLACE PACKAGE BODY <schema_name>.MASK IS
FUNCTION P_NM(KEY_PT_ID NUMBER, KEY_VST NUMBER, ORG_P_NM VARCHAR2)
    RETURN VARCHAR2
IS
    1002
BEGIN
    /* Policy logic to decide whether or not we should mask the P_NM      */
    /* If we should mask the value, then return masked value. Otherwise,   */
    /* return the original value.                                         */
    1004
    1006 /* return the original value.
    IF <policy_codition> 1008
        THEN RETURN ORG_P_NM;
            /* Original Value */
        ELSE RETURN MASKED_P_NM(ORG_P_NM);
            /* Masked value defined by default mask value function */
    END IF; 1010
END P_NM;
END MASK;

```

FIG. 10

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```
SELECT c.PT_ID,  
       i.VST,  
       p.P_NM,  
       p.AGE, p.SEX,  
       i.MD_ID,  
       m.D_NM,  
       i.DRG, i.STAY, ...  
  FROM INPT_FACT i, MD_FACT m, PT_FACT p  
 WHERE i.PT_ID=p.PT_ID AND i.MD_ID = m.MD_ID AND ... ;
```

1102

FIG. 11

```
SELECT MASK.PT_ID(c.PT_ID, i.VST) PT_ID,  
       MASK.VST(i.PT_ID, i.VST) VST,  
       MASK.P_NM(i.PT_ID, i.VST, p.P_NM) P_NM,  
       {MASK.AGE(i.PT_ID, i.VST, p.AGE) AGE},  
       p.SEX,  
       MASK.MD_ID(i.MD_ID) MD_ID,  
       MASK.D_NM(i.MD_ID, m.D_NM) D_NM,  
       i.DRG, i.STAY, ...  
  FROM INPT_FACT i, MD_FACT m, PT_FACT p  
 WHERE i.PT_ID=p.PT_ID AND i.MD_ID = m.MD_ID AND ... ;
```

1302

FIG. 13

